

AMENDMENTS TO THE CLAIMS

1-22. (Canceled)

23. (Currently amended) A needleless injection device, comprising:

a cylinder for medicament having an injection nozzle at a forward end thereof and an opening at its rearward end;

a piston sliding in the cylinder through said open end, in use, to drive the medicament through the nozzle;

a ram to drive the piston into the cylinder and having a longitudinal axis; and

an energy accumulator to drive the ram when discharged and disposed between the ram and a discharge assembly, a rear end of the ram extending into said discharge assembly;

wherein the discharge assembly comprises a retention member fixed in the assembly, said retention member having a plurality of retention elements spaced around and adapted to locate on the ram when in a charged position of the ram, and a release ring surrounding said retention elements to prevent radial outward displacement thereof and discharge of the ram;

wherein axial displacement of said release ring releases said retention elements and causes discharge of the ram by said accumulator;

wherein said retention elements are integral with said retention member and each has an enlarged head which can move into and out of engagement with a groove or recess on the ram by deformation of the material of said retention member; and

wherein said retention member comprises a collet having radially spreadable fingers, ~~which that are biased radially-inwardly, and wherein said~~ collet in use moves between said first position in which said fingers engage with said ram and said second position in which said fingers spread radially out of engagement with said ram.

24. (Canceled)

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25. (Canceled)

26. (Currently amended) A device as claimed in claim [[25]] 23, wherein said release ring comprises a collet lock sleeve which limits outward radial movement of said collet fingers.

27. (Previously presented) A device as claimed in claim 26, wherein axial movement of said collet lock sleeve is limited by abutment thereof against said collet fingers.

28. (Previously presented) A device as claimed in claim 27, wherein said collet lock sleeve and said collet fingers are respectively provided with cooperating tapered surfaces.

29. (Previously presented) A device as claimed in claim 26, wherein said collet lock sleeve and said collet fingers are respectively provided with cooperating tapered surfaces.

30. (Previously presented) A device as claimed in claim 23, wherein said release ring comprises a collet lock sleeve which limits outward radial movement of said collet fingers.

31. (Previously presented) A device as claimed in claim 30 wherein axial movement of said collet lock sleeve is limited by abutment thereof against said collet fingers.

32. (Previously presented) A device as claimed in claim 23, wherein said energy accumulator is a compression spring.

33. (Previously presented) A device as claimed in claim 23, further comprising a nozzle lock assembly which enables a nozzle to be releasably attached to said device upon insertion of a nozzle into an end thereof, the nozzle lock assembly comprising:

on one of said nozzle or said end of the injection device, a twist cap containing a moveable spacer which has a non-circular aperture therethrough; and

on the other of said nozzle or said end of the injection device a protrusion having a correspondingly shaped non-circular outer surface which, if aligned therewith, can pass through said non-circular aperture,

wherein, upon twisting of said twist cap, the moveable spacer twists with respect to said protrusion so that the non-circular aperture of the spacer can be selectively brought into and out of alignment with the non-circular outer surface of said protrusion, so that said protrusion is respectively either free to move in or out of said aperture or is trapped therein by said moveable spacer.

34. (Previously presented) A device as claimed in claim 33, wherein said twist cap is located on said end of the injection device and said protrusion is located on said nozzle

35. (Previously presented) A device as claimed in claim 34, further comprising a second protrusion having the same non-circular outer surface and being axially spaced from the first protrusion.

36. (Previously presented) A device claimed in claim 33, further comprising a second protrusion having the same non-circular outer surface and being axially spaced from the first protrusion.

37. (Previously presented) A device as claimed in claim 33, wherein said non-circular aperture and said non-circular outer surface are substantially triangular.

38. (Previously presented) A device as claimed in claim 33, further comprising a mark on said twist cap which indicates the relative alignment of the non-circular aperture and the protrusion.

39. (Previously presented) A device as claimed in claim 23, wherein said axial displacement comprises a resistance-sensitive trigger comprising an axially-moveable shroud forming at least part of the outer surface of said device, the trigger being activated by application of forward axial force to the shroud which is resisted by the skin of the patient at an injection site.

40. (Previously presented) A device as claimed in claim 39, wherein said resistance-sensitive trigger further comprises a safety-lock, moveable between a locked position, in which the device cannot be discharged and an unlocked position in which the device can be discharged.

41. (Previously presented) A device as claimed in claim 40, wherein said safety lock comprises at least one axially-extending tab which serves as an endstop which, in said locked position, prevents axial movement of said shroud.

42. (Previously presented) A device as claimed in claim 41, wherein said tab is driveable between said unlocked positions by a rotatable drive plate actuated by a switch.

43. (Previously presented) A device as claimed in claim 41, wherein, in said unlocked position, said tab moves axially rearward to engage in a recess in an endcap of the injection device.

44. (Previously presented) A device as claimed in claim 43, wherein said tab is rearwardly biased by means of a spring.

45. (Previously presented) A device as claimed in claim 23, wherein said energy accumulator is a spring confined within a variable-volume chamber, the injection device further

comprising an integral firing force adjustment mechanism which, in use, varies the volume of said chamber, effected by rotation of said ram.

46. (Previously presented) A device as claimed in claim 45, wherein the rotation of the ram is effected by the turning of a key inserted through one end of said device.

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